

Appl No. 10/606,268
Response dated November 1, 2004
Reply to Office Action of June 30, 2004

REMARKS

This is in response to the Office Action dated June 30, 2004. A one month extension request accompanies this response.

In the Office Action, the Examiner rejected claims 15 and 46 under 35 USC section 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 15 and 46 have been amended and are believed proper under section 112.

The Examiner objected to claims 20-26 and 47 as relying upon structure which had not previously been set forth. Claims 20-26 and 47 have been amended and are believed proper.

The Examiner rejected claim 48 under 35 USC 102 as being anticipated by Stenning.

The Examiner rejected claims 48-49 and 53-54 as anticipated by Bishop. That rejection is contained in more detail at page 3 of the Office Action, paragraph 5.

At paragraphs 6 and 7 of the Office Action, the Examiner rejects claims 1-7, 10-12, 14-19, 27-31 and 33-48 as unpatentable over Cushing in view of Stenning. At paragraph 8 of the Office Action, the Examiner rejects claims 1, 8-9, 13, 20-26 and 32 as unpatentable over Campbell in view of Kirby. At paragraph 9 of the Office Action, the Examiner rejects claims 50-52 under 35 USC 103 as unpatentable over Bishop.

These rejections are respectfully traversed.

Each of the claims includes a restriction that the modules and heavy lift vessel are ballasted relative to one another during transfer of module to or from the heavy lift vessel. The claims as amended disclose a method and a apparatus not suggested by the art of record. Some claims (e.g. claims 48, 55) relate to a single bore pipeline which eliminates the need for manifolds. Thus, the pipeline is piggable. Other claims relate to applicant's pipe support arrangement (e.g. see claims 50-53).

The method sought to be patented has great utility in supplying natural gas to remote marine accessible locations such as islands, small countries, or small communities. With the present

invention, a heavy lift vessel can travel to a small city located on an island (as an example) and offload enough natural gas to serve the needs of that community for a selected period of time. The heavy lift vessel can then travel to other locations and offload gas to serve the needs of those communities. Ballasting facilitates installation of modules to the heavy lift vessel. Ballasting can be used to pick up modules that have been filled or to offload modules that are emptied after the natural gas it contains has been consumed. Because each module has a single bore pipeline for containing the natural gas, it can be "pigged" for inspection services.

The Examiner relies upon Cushing. However, Cushing does not relate to the transfer of natural gas using a module that has its own pipeline as claimed. Figure 4 of the Cushing patent illustrates the interior of a barge being transported and partially filled with a liquid cargo. A system to vent gas boil off is discussed (page 9, line 33) (page 11, lines 3 to 11) in relation to the need for a vent stack at the rear of the vessel to dispose of volatile gases presumably resulting from LNG that undergoes a phase change due to heat gains during a voyage. Specific references are to barge vent pipes to be connected to corresponding pipes incorporated into the port side of the vessel and thence via internal pipes (not shown) to the vent pipe at the rear of the vessel. Cushing (column 11, line 12) references drain ports (scuppers) to allow leaking LNG to exit the vessel. No other details of the cryogenic LNG barge containment system are provided and indeed no disclosure regarding specific cargoes or barge design features are made.

The Examiner relies upon Stenning, Bishop, Kirby and Campbell. However, Neither Stenning nor Campbell nor Bishop nor Kirby discloses the method step nor the apparatus of providing a buoyant module having an interior that contains a continuous, single bore pipeline. Neither Stenning nor Campbell nor Bishop nor Kirby discloses transferring the module to the heavy lift vessel wherein the modules and heavy lift vessel are ballasted relative to one another during such transfer. Stenning focuses on the use of multiple, stacked modules, each module containing a small diameter coiled pipe enclosed in a cylindrical container, and each individual module connected to header manifolds which allow for filling and emptying of multiple modules. Figures 1, 3, 6, 7, 8 and

9 of the "383" patent clearly illustrate multiple, stacked modules, connected by manifolds and comprised of multiple pipe sections and valves. Further, claim 1 of the patent, repeatedly mentions a "plurality of pipe coils" while claim 2 teaches "a plurality of support structures, each said support structure being adapted to contain and support at least one said pipe coil and to permit stacking of said support structures and the pipe coils therein." Stennig does not disclose the use of a semi-submersible heavy lift vessel that enables ballasting for module transfer as claimed.

Kirby does describe a transport vessel, but one that is not a semi-submersible. This is evidenced by the fact that Kirby defines the vessel as one where the bottom of the hold is always below the level of the sea. (See the abstract and also page 2 lines 55/56). The defining characteristic of a semi-submersible vessel is that the bottom of the hold transitions from being above sea level, when in transit, to being below sea level when adding or discharging barges. While the Kirby patent discusses a variety of transportation options and vessel design features, it does not disclose the design of semi-submersible hulls or the use of specialized containment vessels/barges for transporting compressed natural gas as claimed.

The present invention module differs from Bishop [0032, Summary of Invention and Claims 53, 58, and 59] wherein pipes are structurally integrated into the marine vessel. Bishop does not disclose transferring a module having its own pipeline to a heavy lift vessel wherein the module and heavy lift vessel are ballasted relative to one another during such transfer. The present invention claims a module with its own internal support of pipes, which is independent of the marine vessel's structural system. This greatly simplifies the pipe support system of the present invention and makes it far safer. Bishop [0020] claims manifolds and valves connecting at each end of parallel, discontinuous pipes, whereas the present invention teaches a continuous pipeline having a pigtable, single bore that includes bends.

The Bishop patent application describes an array of multiple steel bottles, arranged in horizontal layers and supported by conventional steel pipe racks, integrated into the structure of the transporting vessel. Bishop also describes multiple individual pressure vessels which are filled and

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emptied via manifold systems which are illustrated in figures 12 and 28. No single, continuous bore, pipeline, which is not structurally tied in to the vessel and which utilizes a flexible, molded syntactic support system is disclosed by Bishop.

Based upon the above amendments, reconsideration and Notice of Allowance is respectfully requested.

Should the Examiner feel that a telephone conference would advance the prosecution of this application, he is encouraged to contact the undersigned at the telephone number listed below.

Enclosed is check no. 9095 in the amount of \$55.

Applicant respectfully petitions the Commissioner for any extension of time necessary to render this paper timely.

Please charge any additional fees due or credit any overpayment to Deposit Account No. 50-0694.

Respectfully submitted,



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